New Mexico
College of Agriculture
AND
Mechanic Arts.
1891-92.

NEW MEXICO

College of Agriculture

AND

Mechanic Arts.

LOCATION:

Las Cruces, Dona Ana County, New Mexico

CATALOGUE FOR 1891-92.

AND ANNOUNCEMENTS FOR 1892-93.

LAS CRUCES, N. M.
RIO GRANDE REPUBLICAN
1892.

BOARD OF REGENTS.

L. Bradford Prince, Governor, *Ex-Officio.*

Amado Chaves, Superintendent of Public Instruction, *Ex-Officio.*

Robert Black, Silver City; term expires 1892.

Numa Reymond, Las Cruces; term expires 1893.

William L. Rynerson, Las Cruces; term expires 1894.

John R. McFie, Las Cruces; term expires 1895.

Jayno A. Whitmore, San Marcial; term expires 1896.

OFFICERS OF THE BOARD.

John R. McFie, President.

William L. Rynerson, Secretary and Treasurer.

FACULTY AND OTHER OFFICERS [1]

HIRAM HADLEY, A. M., President.

AINSWORTH E. BLOUNT, A. M.,
Professor of Horticulture and Agriculture.

JOHN P. OWEN,
Principal of Preparatory School and Professor of History and Civics.

ELMER O. WOOTON, B. S., [2]
Professor of Botany and Chemistry.

CLARENCE T. HAGERTY, B. S.,
Professor of Mathematics.

C. H. TYLER TOWNSEND,
Professor of Entomology, Zoology, and Physiology.

AUGUST J. WIECHARDT, M. E.,
Professor of Mechanical Engineering.

ARTHUR GOSS, B. S., A. C., [3]
Professor of Chemistry.

PHŒBE E. HAINES, M. S.,
Instructor in Drawing.

COSETTE RYNERSON,
Instructor in Instrumental Music.

J. A. LOWE, [4]
Instructor in Languages.

FREDERICK F. BARKER, LL. B., [5]
Instructor in Languages.

AMELIA FRENGER, [6]
Assistant Instructor in Instrumental Music.

FRANK E. LESTER,
Librarian and College Clerk.

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(1) Arranged in order of election as professors, instructors, etc.
(2) Of both Botany and Chemistry for year 1891-2.
(3) Elected in May, 1892.
(4) Resigned in February, 1892.
(5) Elected March 1, 1892.
(6) Elected in February, 1892.

FACULTY COMMITTEES.

JUDICIARY.

A. J. Wiechardt, *Chairman*,

C. H. Tyler Townsend, Ida M. Jones.

COURSE OF STUDY.

E. O. Wooton, *Chairman*,

A. J. Wiechardt, F. F. Barker.

LIBRARY AND ENTERTAINMENT.

C. H. Tyler Townsend, *Chairman*,

E. O. Wooton, F. F. Barker.

F. E. Lester, Librarian, *Ex-Officio*.

PUBLIC GROUNDS AND COLLEGE FUTURE.

A. E. Blount, *Chairman*,

J. P. Owen, C. T. Hagerty.

CATALOGUE.

C. H. Tyler Townsend, *Chairman*,

J. P. Owen, Phœbe E. Haines.

BOARDING AND ACCOMMODATION.

C. T. Hagerty, *Chairman*,

A. E. Blount, Ida M. Jones.

NOTE—The President of the Faculty is *Ex-Officio* member of all committees.

STUDENTS.

JUNIORS.

Samuel Steel, *Sci. Ag.*..... .....Las Cruces, N. M.

SOPHOMORES.

Joseph Francis Bennett, Jr., *Sci. Ag*..... .... Las Cruces, N. M.
John Milton Barnhart, *Cl. Sci*..... .....West Newton, Pa.
Humboldt Casad, *Sci. Ag*.....Mesilla, N. M.
Thomas Casad, *Sci. Ag*. .... Mesilla, N. M.
Alice Casad, *Sci. Ag*.... .....Mesilla, N. M.
Fabian Garcia, *Sci. Ag*..... .....Mesilla, N. M.
Ralph Roy Larkin, *Cl. Sci*..... ....Las Cruces, N. M.
Lemuel P. McGrath, *Sci. Ag*..... ..... Lordsburg, N. M.
Oscar Charles Snow, *Sci. Ag*..... ..... Mesilla, N. M.
William Hickman Skidmore, Jr., *Sci. Ag*..... Las Cruces, N. M.
George Morgan Williams, *Sci. Ag*..... ..... Las Cruces, N. M.
Kate Agnes Williams, *Sci. Ag*..... .....Mesilla, N. M.
Arthur Edwin Williams, *Sci. Ag*..... .....Mesilla, N. M.

FRESHMEN.

Harry Bennett, *Sci. Ag*.....Las Cruces, N. M.
Frank Cecil Barker, *Sci. Ag*.....Las Cruces, N. M.
Robert G. Boone, *Sci. Ag*..... ....Las Cruces, N. M.
Henry Cady, *Sci. Ag*.....Weed, N. M.
Jessie Casad, *Sci. Ag*.....Mesilla, N. M.
Charles J. French, *Sci. Ag*, ...Las Cruces, N. M.
Numa Frenger, *Mech. Eng*..... .....Las Cruces, N. M.
Claude Herron, *Sci. Ag*..... ....Victoria, N. M.
Homer Hole, *Sci. Ag*..... ....Western Springs, Ill.
Charles Jacob Kezer, *Mech. Eng*..... . ...Las Cruces, N. M.
David Barton Moore, *Sci. Ag*.....Morris Mills, Ga.
Ralph J. McFee, *Mech Eng*.....Las Cruces, N. M.
Albert H. Peterson, *Mech. Eng*..... .....Las Cruces, N. M.
William Logan Rynerson, *Cl. Sci*..... .....Las Cruces, N. M.
Charles A. Whitmore, *Mech. Eng*.....San Marcial, N. M.

COURSES OF STUDY.

FRESHMAN YEAR.

	AGRICULTURE AND SCIENCE.		MECHANICAL ENGINEERING.		CIVIL ENGINEERING.		CLASSICAL AND SCIENTIFIC.	
AUTUMN TERM.	Algebra	5	Algebra	5	Algebra	5	Algebra	5
	Rhetoric	5	Rhetoric	5	Rhetoric	5	Greek	5
	Book-keeping	5	Drawing, Mech	2	Book-keeping	5	Latin	5
	English	1	English	1	English	1	English	1
	Drawing, F. H	1	Drawing, F. H	1	Drawing, F. H	1	Drawing, F. H	1
	Agriculture	1	Agriculture	1	Agriculture	1	Agriculture	1
	Military Drill	2	Military Drill	2	Military Drill	2	Military Drill	2
	Word Analysis	2	Word Analysis	2	Word Analysis	2	Word Analysis	2
			Wood Turning	2	Mechanical Drawing	2		
WINTER TERM.	Algebra	5	Algebra	5	Algebra	5	Algebra	5
	English Literature	5	Drawing, Mech.	2	Drawing, Mechanical	2	Greek	5
	Ancient History	5	Ancient History	5	Ancient History	5	Latin	5
	English	1	English	1	English	1	English	1
	Agriculture and Horticulture	1	Agriculture and Horticulture	1	Agriculture and Horticulture	1	Agriculture and Horticulture	1
	Drawing, Perspective	1	Drawing, Perspec	2	Drawing, Perspective	2	Drawing, Perspective	2
	Military Drill	2	Military Drill	2	Military Drill	2	Military Drill	2
	Word Analysis	2	Word Analysis	2	Word Analysis	2	Word Analysis	2
			Carpentry and Joinery	2	English Literature	5		
SPRING TERM.	Algebra	5	Algebra	5	Algebra	5	Algebra	5
	Plane Geom	5	Plane Geom	5	Plane Geometry	5	Greek	5
			Drawing, Mechanical	2	Drawing, Mechanical	2	Latin	5
	English	1	English	1	English	1	English	1
	Horticulture	1	Horticulture	1	Horticulture	1	Horticulture	1
	Drawing, Arch	1	Drawing, Machine Sketching	1	Drawing, Arch	1		
	Military Drill	2	Military Drill	2	Military Drill	2	Military Drill	2
	Word Analysis	2	Word Analysis	2	Word Analysis	2	Word Analysis	2
	Botany	5	Steam Engine	3	Botany	5		
			Blacksmithing	2				

COURSES OF STUDY.

SOPHOMORE YEAR.

	AGRICULTURE AND SCIENCE.		MECHANICAL ENGINEERING.		CIVIL ENGINEERING.		CLASSICAL AND SCIENTIFIC.	
AUTUMN TERM.	Agriculture	1	Machine Design	3	Agriculture	1	Agriculture	1
	Drawing, Arch	1	Foundry	3	Drawing, Arch	1	Rhetoric	5
	English	1	English	1	English	1	English	1
	Geometry, Plane and Solid	5	Geometry, Plane and Solid	5	Geometry, Plane and Solid	5	Latin	5
	Physiology	5			Physiology	5	Physiology	5
	Spanish	5	Spanish	5	Spanish	5	Greek	5
	Plane Trigonometry	3	Plane Trigonometry	3	Plane Trigonometry	3		
WINTER TERM.	Agriculture and Horticulture	1					Agriculture and Horticulture	1
	Chemistry	5	Chemistry	5	Chemistry	5	Latin	5
	English	1	English	1	English	1	English	1
	Solid Geom. and Conic Secs	5	Solid Geom. and Conic Secs.	5	Solid Geom. and Conic Secs	5	Greek	5
	History, Med. and Mod	5	Machine Design	3	Junior Physics	5	History, Ancient	5
	*Physiology, Adv. {Rec	4	Foundry and Pattern Making	3	Drawing, Arch	1	English Literature	5
	*Physiology, Adv. {Lab	1						
	Spanish	5	Spanish	5	Spanish	5		
SPRING TERM.	Botanical Lab	5	Elementary Mechanics	5	Elementary Mechanics	5	Botany	5
	Chemical Lab	5	Chemical Laboratory	5	Chemical Laboratory	5	Latin	
	Spherical Trigonometry	3	Spherical Trigonometry	3	Spherical Trigonometry	3	Greek	5
	English	1	English	1	English	1	English	1
	Horticulture	1	Machine Design	3	Junior Physics	5	Horticulture	1
	American Literature	4	Pattern Making	3	American Literature	4	Plane Geometry	5
			Boilers	2				

* Elective.

COURSES OF STUDY.

JUNIOR YEAR.

	AGRICULTURE AND SCIENCE.		MECHANICAL ENGINEERING.		CIVIL ENGINEERING.		CLASSICAL AND SCIENTIFIC.	
AUTUMN TERM.	Chemical Agriculture	3	Analyt. Geometry	5	Analyt. Geometry	5	Geometry, Plane and Solid	5
	English	1	English	1	English	1	English	1
	Geology	4	Kinematics	4	Geology	4	Geology	4
			Descrip. Geometry	3	Descriptive Geometry	3	Latin	5
	Surveying (Recitation	2	Machine Design	3	Surveying (Recitation	2	Trigonometry, Plane	3
	Surveying (Field Work	3	Machine Shop	3	Surveying (Field Work	3	Spanish	5
	Zoology and Comp. Anat	3	Steam Engine	3	Zoology and Comp. Anat	3	Zoology, and Comp. Anat	3
WINTER TERM.	English	1	English	1	English	1	English	1
	Geology	5	Calculus, Diff	5	Calculus, Diff	5	Spanish	5
	Physics	5	Physics	5	Surveying and Leveling	3	Latin	5
	Stock	4	Descrip. Geometry	2	Descriptive Geometry	2	Solid Geometry, and Conic Secs.	5
	Zoology, Systematic	5	Kinematics	2	Zoology, Systematic	5	Zoology, Systematic	5
			Machine Design	3	Soph. History, Med. and Mod	5	History, Med. and Mod	5
			Machine Shop	3				
SPRING TERM.	Civics	5	Calculus, Int	5	Calculus, Int	5	Latin	5
	English	1	English	1	English	1	English	1
	Entomology	5	Graph. Stat. Mech	1	Civics	5	Entomology	5
	Horticulture	4	Machine Design	3	Astronomy, Descriptive	5	Elem. Mechanics	5
	Physics	5	Physics	5	Surveying, Railway	3	Botanical Lab	5
			Mechan. Lab	2			American Literature	4
			Machine Shop	3				
			Thesis, Original	1				

COURSES OF STUDY.

SENIOR YEAR.

	AGRICULTURE AND SCIENCE.	MECHANICAL ENGINEERING.	CIVIL ENGINEERING.	CLASSICAL AND SCIENTIFIC.
AUTUMN TERM.	Agriculture.. ... . 4 English... .... 1 Landscape Gardening . .. . 5 Political Economy..... ..... 5 Jun. Anal. Geometry..... 5 *Entomology, Adv.... ..... 4 *Histology, Animal..... 3	Machine Design.. . ..... 2 Mechanical Lab..... ..... 3 Mechanics, Analyt .. .. 5 Mechanics of Machinery... .... 4 Machine Shop..... . .... 2 Strength of Materials..... 5	Mechanics, Analyt..... 5 Political Economy..... 5 Railway Location..... 5 Strength of Materials 5	Logic .... 5 English..... 1 Landscape Gardening..... 5 Political Economy .... 5 History of Philosophy 5
WINTER TERM.	Horticulture..... ..... 4 English..... .. .. 1 Meteorology .. .. 5 Psychology..... ... . 3 Jun. Diff. Calc..... 5	Design, Machinery..... 2 Mechanical Lab..... .. 3 Mechanics, Analyt ..... 3 Psychology ..... 3 Mechanics of Machinery..... 4 Machine Building ..... 2 Thermodynamics... 5	Design, Bridge .... 5 Engineering .... 5 Mechanics, Analyt..... 5 Psychology.. 3	Chemistry..... .... 5 English..... ... . 1 Metoerology..... 5 Psychology..... ... 3 Physics 5
SPRING TERM.	Moral Science..... ... 3 English .... 1 Veterinary .... 5 Jun. Des. Astronomy... .... 5 Jun. Int. Calculus ..... 5 Thesis 5	Design Machinery ..... 3 Graphics of Roofs..... .... 3 Mechanical Lab .... 3 Mechanics of Machinery.. ... 4 Moral Science..... ..... 3 Thesis, Professional..... 5 Machine Building..... 2	Designing. ..... 3 Graphics of Roofs..... 3 Engineering..... ... . 4 Moral Science... .... 3 Thesis, Professional..... 5	Physics..... ..... 5 Chemical Lab..... ..... 5 Civics..... .... 5 Moral Science.... .... 3 Thesis..... 5

* Elective.

Courses of Study.

During the coming year, the following courses will be taught. As far as practicable these will be the same through the Freshman year, but during the subsequent years they diverge widely.

(1.) A course in Science and Agriculture.
(2.) A course in Mechanical Engineering.
(3.) A course in Civil Engineering.
(4.) A Classical Scientific course.

Course in Science and Agriculture.

PRACTICAL AGRICULTURE AND HORTICULTURE.

In this subject the purpose is not to make complete farmers, fruit-growers, and stock-breeders, full-fledged and proficient in all lines of practice; but men, intelligent citizens, with correct, rudimentary knowledge so well established that it may serve them as a sure and infallible groundwork for future acquirements and future development. Agriculture being the basis of all the industrial pursuits, a wide range of instruction on both general and special subjects is absolutely necessary.

In the outline submitted we recognize the fact that education is always a help to the farmer: that he may be more successful as a farmer after a thorough training in any line of study—classical, scientific, or technical—the education only making more effective the powers of the mind: and that the best years of his life for college work are the best for acquiring a business knowledge and training.

The lecture course proposes to furnish to all who wish to be farmers, in the true sense of the term, an opportunity to inform and acquaint themselves with the many scientific questions

and teachings which their work daily brings before them, and to assist them in working out many problems yet unsolved.

During the Freshman and Sophomore years, a series of lectures on the elements of agriculture and of horticulture will be given, the scope of which will include the history and development of agriculture as an art and a science, its relations to other arts and sciences and to our national prosperity; on farm crops, planting, cultivating and harvesting, stock, manure, fertilizers, buildings, fences, implements, accounts, buying and selling.

Under the head of horticulture the lectures will include pomology, vegetable gardening, floriculture, and seed growing.

During the Junior year, lectures will be given on the various breeds of cattle, horses, sheep, swine and poultry; soils, seeding, irrigation, stock-feeding for flesh and milk.

In horticulture—budding, grafting, layering, pruning, care and cultivation of fruit trees, vines, and small fruits.

During the first and second terms of the Senior year, rotation of crops, drainage, cereals, their improvement by selection, crossing and care, principles of feeding, milk butter, and cheese-making. In horticulture—landscape gardening, ornamentation with trees, shrubs, flowers, lawns, wind-brakes, and the effects of trees on climate.

A. E. Blount, Professor.

CHEMISTRY.

During the winter term of the Sophomore year, students will study the theory of chemistry, acquainting themselves with symbols, valence, atomic weights, methods of writing reactions, etc., assisted by occasional recitations in the laboratory and by many experiments before the class.

Most of the time will be devoted to the study of inorganic chemistry, although organic chemistry will receive some attention.

In the spring term of same year, students will spend two hours daily in the laboratory where each will be supplied with a full list of reagents and all necessary apparatus for the analysis of all common compounds. All the various methods of chemical separations will thus be learned by experience, and the examination will consist of the analysis of several substances of which the student knows nothing more than what he may see, feel, taste, or smell, and of which he must find out all that may be known. Text-books: Remsen's Briefer Course; and Laboratory Manual, by Dennis.

A student taking this second term's work will be charged five dollars ($5.00) to cover expense of materials, fuel, etc., and besides this will be held responsible for all apparatus broken by himself.

During the fall term of the Junior year, students of the Science and Agriculture course will spend nine hours each week in the laboratory at work in agricultural chemistry.

The work in this class will be simply an introduction to the methods of quantitative analysis, both volumetric and gravimetric, in relation particularly to the analysis of waters, soils, plants, and manures.

In so short a time it is useless to attempt to give more than a general and rudimentary knowledge of so extensive a subject, and only those points which are of fundamental importance will be dwelt upon. Frankland's Agricultural Chemical Analysis will be taken as a guide in this work.

The department of chemistry has at present a department library of several volumes at its command, among which are the best reference books on chemistry and kindred subjects.

The reading room is supplied with the best periodical literature on this subject printed in the English language.

E. O. Wooton, Professor.

BOTANY.

Elementary Botany.—In the spring term of the Freshman year the organs of plants are studied first, most of the time be-

ing devoted to phænogamic botany. The subject of cryptogamic botany will be briefly studied in the latter part of the term, as well as some of the more prominent points of physiological botany.

The classification of plants and their uses are other points which will receive attention. During this term it will be a part of the required work that each student shall analyze a number of flowers, as well as prepare some few specimens for the herbarium. Each student is required to provide himself with a pocket lens, needles, and other apparatus necessary for the analysis of flowers.

Gray & Coulter's is the text book in use.

Advanced Botany.—In the spring term of the second year, two hours daily are devoted to the study of physiological botany. For this purpose the college is supplied with Bausch and Lomb's compound "Model" microscopes, with magnifying power of from 50 to 300 diameters, as well as with all apparatus, reagents, books of reference, etc., necessary for the study of the minute structure of plants.

The method of work will be the study of the simple vegetable cell, its contents, various modifications, etc., from the simplest to the most complex forms of plant life.

Some of the time will be devoted to the study of smut, rust, and other parasitic cryptogams, thus introducing the student to the plants which are damaging to the various valuable members of the vegetable kingdom. The intention is not to attempt anything more than a good foundation for future work, but just to touch upon the general and more important points of microscopic botany, and so give an outline view of the subject.

Opportunity for more advanced work in this department will be given if desired by students, but special arrangements must be made for it.

Bessie's Botanies, and Arthur, Barnes and Coulter's Handbook of Plant Dissection will be used as guides in this work.

For the first term's work in botany the students have access to the department library which contains a large number of valuable books of reference on this work. Among others may be found Chapman's Flora of the Southern United States, Gray's Flora of North America, the Botany of King's Survey of the 40th Parallel, Botany of Wheeler's Survey of the 100th Meridian, Botany of the Mexican Boundary Survey, Botany of the Pacific Railroad Survey, Genera Plantarum, and many other valuable books on organography and systematic botany. Students also have access to the college herbarium, which now contains specimens from many parts of the United States, for comparative study and reference.

Students in the advanced botany class will find some of the standard works on physiological and histological botany in the library; such as Sach's on the Physiology of Plants, Strasburger's Manual of Histology, DeBarry on Morphology and Biology of the Fungi, Mycetozoa and Bacteria. The same author on Comparative Anatomy of Phanerogams and Ferns; Crookshank on Bacteria, and many others.

A fee of one dollar ($1.00) will be charged students of the advanced class to compensate for the wear on the instruments, and the slight breakages in this work. Any serious damage done to the instruments which is due to carelessness on the part of the student must of course be made good by him.

E. O. Wooton, Professor.

ENTOMOLOGY.

The regular course in entomology occupies the spring term of the Junior year, and will be presented in three topics, as follows: Anatomy and physiology; systematic entomology, or the classification of insects; and the natural history, metamorphosis and habits, with special reference to economic entomology, or

insects injurous to agriculture and horticulture and the remedies to be used against them.

Each student will be afforded practice in the use of characters employed in classification, and will be required to identify several insects in each order by means of analytical tables. In addition, every student will be required to make a collection of a certain number of species in any one or more orders, and will be instructed in the proper methods of mounting. Instruction will likewise be given in the use of the miscroscope and the manipulation of apparatus. A hand lens of good field and moderate power, and another of higher power will be necessary in this study.

Hyatt and Arms' Insecta, and Packard's Entomology for Beginners are used in conjunction as text-books. They are more or less supplemented by lectures, by use of the college collection of insects, and by a large and valuable stock of books of reference.

An advanced course in entomology is elective to those who show proficiency in the required course, and have special taste in this direction. It will occupy the fall term of the Senior year. The object of this course is to go farther along the same lines begun in the required course, and to attain fitness for special study of some selected group.

Comstock's Introduction to Entomology will be used as a text-book, supplemented by lectures and special work under immediate supervision and guidance.

C. H. Tyler Townsend, Professor.

ZOOLOGY.

Zoology is treated under the heads of comparative anatomy; and systematic zoology, or classification according to structure and embryonic development, together with the habits and geographical distribution of animals.

It is divided into two terms of required work, occupying the fall and winter terms of the Junior year. The first term is

entirely occupied with dissections of the various types of the animal kingdom, and the student is required to keep careful notes and drawings illustrative of his work. Dissection of the higher animals is so planned as to demonstrate homologies in the anatomy of the vertebrates, and students are required to prepare mounted slides of tissues for the microscope. The second term is devoted entirely to systematic zoology, in which the most approved scheme of classification is thoroughly studied. Some practice is given in the identification of species, and a certain amount of time is devoted to a consideration of economic zoology.

Colton's Practical Zoology is used as a guide in the first term's work. Orton's Comparative Zoology is used as the text-book during the second term. The scheme of classification, as there stated, is supplemented by reference to Claus and Sedgwick's text-book. The value of the student's work in this subject is greatly enhanced by a very complete set of books of reference for the zoological laboratory.

C. H. Tyler Townsend, Professor.

PHYSIOLOGY.

This study is divided into a required, and an elective advanced course. The required course occupies the fall term of the Sophomore year, and is pursued with the aid of a text-book. The subject matter of the recitations is illustrated by means of charts, models, and a mounted human skeleton. The students will have the opportunity to examine prepared slides of various tissues of the human body under the microscope, and will be given a chance to test their skill in the preparation of new slides from the tissues of the lower animals.

The advanced course follows the above in the winter term of the Sophomore year, and is made to embrace human and comparative anatomy and physiology. It is pursued with the aid of an advanced text-book, and one period per week, or its equiva-

lent, is spent on the dissection of the dog, as a practical basis for the study of anatomy and physiology.

Martin's Human Body (Briefer Course) is used the first term. In the advanced class, Martin's Human Body (Advanced Course) is used as a text-book, and Howell's Dissection of the Dog is used as a guide in dissection. The study of this subject is greatly facilitated by the Bock-Staeger set of 28 anatomical models of the human body which this department possesses.

An elective course in animal histology will be open, in the first term of the Senior year, to those students who have shown proficiency in physiology and zoology. Schæfer's Essentials of Histology will be used as a guide in histological work.

C. H. Tyler Townsend, Professor.

MATHEMATICS.

The prescribed course in Mathematics, for all regular college students, comprises a year of algebra, a year of plane and solid geometry including conic sections, and one term, three periods per week, of plane trigonometry. One term's work in elementary mechanics is required of all except those who are taking the course in Science and Agriculture. All, except those in the Classical Scientific course, have spherical trigonometry, one term, three periods per week, land surveying one term, and analytical geometry and calculus one year. In addition to the above, students taking the Civil or Mechanical Engineering courses have two terms of analytical mechanics.

Algebra is begun in the Freshman year, and completed as far as the binomial theorem inclusive. Much attention is given to the demonstration of original theorems, and to the solution of original problems in geometry. The instruction in all the branches of mathematics will be made as practical as possible.

C. T. Hagerty, Professor.

POLITICAL SCIENCE AND HISTORY.

Constitutional Law.—This is a course upon the constitution of the U. S. Cooley's "Principles" will be used as a text-book, supplemented by lectures. This study occupies a full term of the Junior year.

Political Economy.—This subject is pursued during a full term of the Senior year. Instructions will be given by means of recitations and lectures.

The current practical problems of industrial society are also discussed on the basis of economic principles. Each student will be required to prepare an original paper upon some topic which will be assigned him.

History.—During the winter term of the Freshman year, Sheldon's History is studied, taking ancient history. Mediæval and modern history is studied during the winter term of the Sophomore year. While a text-book is used, the instruction is largely supplemented by lectures, and illustrative readings. Considerable attention is given to the various forms of government. The chief object of the course is to inculcate in the student a love of the study of history, and to teach him to form his own conclusions from the facts presented. Students will have access to the following books of reference on the above subjects: The works of Brancroft, Mace, McMaster, Bryce, Cooley, Woolsey, Grote, Rawlinson, Wells, Adam Smith, Mill, Carey, and many others.

JNO. P. OWEN, Professor.

DRAWING.

Free-hand.—This study is required of students in the preparatory school during two years. The students of the first year will complete books V and VIII of White's Drawing; those of the second year books IX and X of the same series. Both classes will be given supplementary exercises from models and copies.

The students of the college department are required to spend two hours per week during the first term of the Freshman year in free-hand drawing. This work includes a progressive review of the primary work and the construction of regular and irregular courses with their practical applications as taken up in Walter's Free-hand Drawing, book I.

Linear Perspective.—During the winter term of the Freshman year, all students will devote four periods per week to exercises in elementary linear perspective. Problems are given involving the perspective of points, lines, surfaces—as the square, circle, and hexagon—rectangular solids and their intersections, pyramids, and prisms. Henry Lewis' Principles of Linear Perspective is used as a text-book.

Architectural.—During the spring term of the Freshman year, students of the courses in Science and Agriculture and Civil Engineering will devote two hours per week to architectural drafting. Tinting, shading and the conventional modes of representing building materials will receive special attention. The construction of plans will be taken up by the students of the above mentioned course during the fall term of the Sophomore year and this line of work will be continued during the winter term of the Sophomore year for students of the course in Civil Engineering. Babcock's Architecture will be used as the basis of this course.

A more advanced course in drawing will be provided for those who desire it.

Books of reference are Mahan's Industrial Drawing, Church's Descriptive Geometry, Walter Smith's Art Education, Lubke's History of Art, Prang's Art Atlas, Von Bezold's Theory of Color, Viollet Le Duc's Young Designer, Story of a House and Annals of a Fortress, White's Model and Object Drawing and Theory of Design, Ellis' Sketching From Nature, Walker's Hand-book of Drawing, and Morse's Mechanical Drawing.

PHŒBE E. HAINES, Instructor.

INSTRUMENTAL MUSIC.

Piano.—First term includes Urbach's Instructor; Touch and Technic, by William Mason; Finger Exercises, book I, from Kohler Loeschorn, or Czerny.

Second term includes Urbach continued; Mason continued; Finger Exercises continued, book I and II; easy selections.

Third term includes Urbach continued; Mason continued; book II of Exercises continued, being book I of Cramer's Studies; book I of Kuhlau's Sonatas.

Fourth term includes Urbach completed; Mason continued; Cramer and Kuhlau continued; selections of medium difficulty.

Fifth term includes Mason, Cramer, and Kuhlau continued; Beethoven's Sonata, p. 49, No. 1 or No. 2.

Sixth term includes Mason continued; book I, of Cramer's Studies completed; book I of Kuhlau's Sonatas completed; begin book II of Cramer's Studies; also book II of Kuhlau's Sonatas; difficult selections.

Higher work will be provided for those who desire it.

Recitals.—A musicale will be given at the end of each term, to show the progess made by the pupils, and also to give them an opportunity to play in puplic.

COSETTE RYNERSON, Instructor.

Course in Mechanical Engineering.

The candidate for admittance to this department should be thoroughly prepared in mathematics, and while fifteen years is the minimum age of entrance, it is strongly recommended that those who expect to take this course should possess that maturity and force of character which comes with the riper age of about eighteen. It is, therefore, advisable for a student of fifteen to take at least one or two years of literary work before commencing his professional studies.

This course aims to educate young men of ability to undertake and successfully work out the ordinary engineering problems. The student's time will of necessity be devoted very largely to technical studies, but enough literary work is included to give as broad and liberal an education as the limited time of the course will permit. The leading subjects taught are, pure and applied mathematics, English, drawing and machine design, modern shop practice, mechanical laboratory practice, and the theory underlying engineering. An outline of the ground covered by pure mathematics and English will be found under their respective heads.

DRAWING AND MACHINE DESIGN.

Drawing begins in the first term of the Freshman year, and consists of free-hand sketching from outline figures and mechanical models. During the same term instrumental drawing is taught, the object being to make the student familiar with the ordinary drawing instruments. The required work consists of drawing geometrical figures, involving combinations of right lines and curves. Extreme accuracy is required in this, as in all the practical work of this department, the students repeating each exercise, if necessary, until a satisfactory result shall have been obtained.

Perspective drawing is taught with the two-fold object of learning the application of its principles and as a means of further practice in free-hand and instrumental drawing, begun in the preceding term. Isometrical drawing, in addition to its own value, is taught as a means of reading mechanical drawings, the student, after receiving the necessary general directions, being required to make isometrical drawings from given mechanical drawings. Following this, in the last term, the student makes dimensioned sketches and pencil drawings of sections of lathe, planer, and engine-beds: and valve passages and other machine castings. These drawings being made of the same size will be traced and blue printed, each student making

enough prints of his own for distribution among his class-mates. These prints will be bound into books and preserved for future use in connection with the foundry and pattern-making work.

The time assigned to drawing in the Sophomore year is devoted to a thorough consideration of the elements of machine design, such as fastenings, bearings, pulleys, belts, gears, and connecting rods.

The design of a one-hundred horse power high speed steam engine, problems in geometry, valve diagrams, and graphic statics of mechanisms comprise the work on this subject in the Junior year.

The Senior year is begun by the student designing a complete machine, or machine part, and making the necessary detail drawings and blue prints, the latter to be used by the student during the second and third terms of this year to aid him in completing a "graduating piece" in the shops, which shall show proficiency in that part of the course. In this connection the student is advised and encouraged to select some design of his own, in which case he is required to report thereon, in writing, with the necessary sketches, for the approval of the head of the department, not later than May 1st of his Junior year. Providing a student fails to make his own selection, a subject will be assigned him; but in either case the object sought is originality, and not the mere copying of work done by others. The designing of hoisting, pumping, metal-working, electrical, and other machinery from specifications, completes this work in the Senior year.

The draughting room, as well as the shops and engineering laboratories, are at all times conducted, as nearly as practicable, on the basis of an engineering establishment.

SHOP PRACTICE.

It is not the object of this course to produce skilled mechanics. Such a course may be provided, however, should the demand warrant such a departure. This part of the course will

embrace sufficient instruction in the trades of the wood-turner, carpenter and joiner, blacksmith, moulder and founder, pattern-maker, and the machinist, to enable a graduate of this department to intelligently superintend and successfully direct work depending upon a knowledge of these trades. Wood-turning and carpentry and joinery, being preparatory to pattern-making, involve progressive exercises illustrating the use and care of edge tools. The final work in these two subjects will be the production of a useful or ornamental article requiring joinery and wood-turning in its construction, and illustrative of the student's proficiency in these trades.

In the blacksmith shop the student is taught the care and management of his fire, forging and welding iron; forging, annealing, hardening, and tempering steel. The production, by the student, of a set of lathe and vise tools, to be used later in the machine shop, constitutes the final work in this trade.

In the foundry, instruction is given in moulding materials, moulding in green sand, dry sand and loam, core-making and mixing and melting of metals, and cupola management. In addition to making several castings for future use in the machine shop, the student is required to make a difficult or ornamental casting in bronze as the final work.

Pattern-making.—The student, having taken wood-turning, carpentry and joinery, and foundry work, is now farely well prepared to commence pattern-making; and from his foundry experience he knows what it is to have a well or poorly constructed pattern. This work will consist of a carefully selected set of exercises designed to bring out the principles underlying the pattern-makers' trade; but the student stands ready at all times to assist the Seniors in the construction of patterns for their "graduating piece." In the assignment of Sophomores to this work, selection will be made from the most skilled and careful members of the class.

To test the student's knowledge of pattern-making and foundry work, he will be examined on the blue prints of machine castings made in the Freshman year.

Machine-tool work includes instruction at the vise, where the student finishes a pair of riveted callipers and a hammer, both of which, together with his center punch and chisels, now used for the first time, were made in the forge-shop. After a few additional exercises at the vise, the student begins work on the machine tools, which consists of exercises so designed as to exhibit the chief uses of the lathe, planer, drill-press, milling-machine, shaper, and hand-lathe. This work occupies the student's time in the shop until the second term of the Senior year. By this time, if a diligent student, he has sufficiently mastered these tools to begin his "graduating piece," the final work in the shops.

Seniors desiring assistance from the Sophomore pattern-makers may, on receiving permission from the head of the department, obtain experience in this direction if it is thought to be of advantage to both classmen.

Provided the "graduating piece" is finished and accepted before the end of the year, the remaining time may, by special permission, be devoted to advanced work of an engineering character.

MECHANICAL LABORATORY PRACTICE.

This subject is begun by a study of the methods and means of testing the materials of engineering, the performance and efficiency of injectors, boilers, pumps, and engines.

The callibration of instruments used by the engineer is followed by tests of strength of materials; a study of the theory being carried on at the same time in the class room, the student thus proving the results of theory by actual tests.

Duty and efficiency trials of pumps, engines, etc., completes this work; the student being directed to return reports in accordance with well-established engineering practice.

THEORETICAL ENGINEERING.

The application of mathematics to practice is considered under the subject of boilers, their strength, construction, and efficiency; kinematics, nature and equivalence of mechanism, due attention being given to the important applications of this subject to machine design; the steam engine considered as a transformer of energy, its design, construction, and efficiency; mechanics of machinery, treating of hoisting machinery, accumulators, cranes, locomotives, pumps, pumping and blowing engines, compressors, and fans. Strength of materials, analytical mechanics, and thermodynamics complete the work of the Senior year.

The graduate of this couse, on the presentation of a satisfactory thesis, will receive the degree usually given for this work.

A. J. WIECHARDT, Professor.

Course in Civil Engineering.

The first year's work in this course differs from that of the course in Science and Agriculture in the amount of drawing required. Surveying is begun in the Junior year and continued to the end of the course. It is taught by means of lectures, recitations, field-work and office-work, five periods per week each term except during the second term of the Junior, and the third term of the Senior year, when only three periods per week will be devoted to the subject. A class period is considered equivalent to two periods in the drawing room and three in the field.

Whenever the word "period" is used, the amount of work equivalent to a class period of fifty minutes is understood.

During the first term of the Junior year students receive instruction in the theory and practice of land surveying. Surveys are made, notes plotted, and areas computed. This work

is followed by trigonometrical surveying and leveling, and topographical surveying the third term.

The theory and practice of rail-road surveying will be taught throughout the Senior year. It will include problems in simple and compound curves, tremonts, earthworks, and economics of locations. Students will be required to make reconnoissance, preliminary, and location surveys of a railroad several miles in length. Railroad maps and profiles must be made from the field location. One lecture a week on railway economics and construction will be given in the last term.

The course of instruction is described to make the student familiar with the principal instruments and methods used in land, topographical and railroad surveying. He will have practice in the use of the compass, engineer's transit with solar attachment, engineer's level, plane table, prismatic compass, aneroid barometer, clinometer, optical square, planimeter, pantograph, and sextant.

During the Senior year instruction will also be given in the elements of civil engineering, which will embrace the following subjects: Properties of materials used in construction, strength of materials, masonry, framing, bridges, roofs, common roads, railroads, and canals.

C. T. Hagerty, Professor.

Classical Scientific Course.

This course is intended for those students, who, although not reading with the view of entering any particular profession, are nevertheless desirous of receiving a liberal education. During the first two years the chief studies are Latin and Greek. These are taken for the most part in connection with the etymology and structure of the English language, and as a preparation for the reading of science, philosophy, and law. The principles

of science and philosophy are the chief subjects of study for the last two years.

A student who has gone through the first half of this course, and is desirous of entering one of the strictly classical colleges, will be in a position to pass the required entrance examination without further study.

Under certain circumstances a student who wishes to do so will be allowed to continue his classical studies during his third and fourth years. A detailed arrangement of the course will be found on pages 6 to 9.

F. F. Barker, Instructor

General Information.

REQUIREMENTS FOR ADMISSION.

To enter the Freshman class of the college, students must be able to pass a satisfactory examination in reading, spelling, arithmetic completed including metric weights and measures, English grammar, U. S. history equivalent to that contained in any good text book on this subject, descriptive geography, and hygiene as required by the U. S. law for territories.

All applicants for admission must be at least fifteen years of age and must furnish satisfactory evidences of good moral character. No person known to indulge in intoxicating drinks or to visit gambling houses will be received. No student under the age of fourteen (14) years will be admitted to the Preparatory School, unless in the care of a parent or other legal guardian.

Students who can satisfactorily pass the above examination are well equipped for either the ordinary duties of life, or to enter successfully upon the college course. Without this foundation they cannot succeed in the college.

Therefore, both in the interest of the student and the college, we shall insist that this preparation be thoroughly made.

LENGTH OF TERMS.

The college year is divided into three equal terms of twelve and a half weeks each:

Autumn term begins on the last Wednesday in August, and ends on the Friday before the last Wednesday in November.

Winter term begins on the Monday before the last Wednesday in November, and ends on the first Tuesday in March.

Spring term begins on the first Wednesday after the first Tuesday in March, and ends on the first Friday after the last Saturday in May.

Holiday vacation of two weeks begins on the Saturday before the last Sunday in December, and ends on the first Sunday after the first Saturday in January. All legal holidays will be observed.

Examination of new students for the purpose of classification will be held on the Tuesday before the last Wednesday in August, at 9 a. m. All applicants for admission, and all former students who were not present at the regular term examination, or who failed to make the grade and desire another examination, should present themselves promptly.

EXPENSES.

Entrance fee, each year, $3.00. Deposit as guarantee of proper care of books, apparatus, and other property, $5.00. This will be returned when the student withdraws from college, provided there are no legitimate charges against him. Sophomore students in chemistry, to cover breakage of apparatus, $5.00. Sophomore students in botany, $1.00. Students in mechanical engineering, to pay for materials used, each term, $3.00. Students in instrumental music, per quarter, $10.00. For use of horse stall, per term, 25 cents. All fees must be paid in advance.

TEXT-BOOKS AND STATIONERY.

As the college is distant about two miles from any store dealing in these articles, it has been found necessary, for the

accommodation of students, to carry at the college a small line of stationery, such as pencils, pens, paper, etc., which are sold to students, for cash only, at a very small profit.

Text-books, and some other materials, will be furnished by the college. Either they will be sold to students—invariably for cash—at actual cost, or they will be loaned. Each student will be requested to deposit in advance the sum of $5.00, which will be credited to his account on the college books, and made a special deposit of in the bank. Against this sum will be charged all unreasonable damages done to books or other property, or losses sustained by the student's neglect to properly account for books that have been loaned to him. At the close of the year, or when said student withdraws from the college, the balance will be returned to him. This deposit fee may be increased if circumstances and the justice of the case seem to demand it.

REDUCED RAILROAD FARES FOR STUDENTS.

Arrangements have been made with the Atchison, Topeka, and Santa Fe Railroad Company, by means of which students who have paid full fare on coming to the college are returned for one-third fare. This reduced return fare will only be given when a student returns at the end of a term. It will not be given at other times. Notice particularly how to obtain this reduced fare, and comply with the instructions to the letter. When you buy your ticket to come to the college, if you pay full fare, explain to the agent where you are going, and ask him to give you a receipt for the amount you pay him. Preserve the receipt and bring it with you. When you desire to return, it will be the essential thing in securing for you the one-third return fare. Only those who pay full fare on coming will be benefited by this arrangement. We hope arrangements will be made with the other railroads in the Territory for similar accommodations.

CLASS PERIODS AND EXERCISES.

The following definition of an "exercise" is copied from the rules adopted by the faculty:

"An exercise shall consist of one lecture or recitation; one essay, oration or declamation; two hours of drawing; and three hours of laboratory, shop-practice or field work."

A college hour consists, for the present, of fifty minutes, and is equivalent to a class period.

In the tabulated statements of the courses of study, on pages 6 to 9, the figure to the right of any subject signifies the number of exercises per week in that subject.

HOW TO ENTER THE COLLEGE.

The post office of the college is Las Cruces, New Mexico. This is also the general freight and express office for the college, but Mesilla Park station on the A. T. & S. F. R. R. is nearer the college, and more convenient for those who have no occasion to visit Las Cruces. There is no hotel at Mesilla Park.

Strangers will find it more convenient to stop at Las Cruces, and go temporarily to one of the hotels. They should then report to the president, who will assist them in securing board or finding other accommodations.

By all means be on hand for the entrance examination and the first recitations. A single day's absence at this part of the term may cause the student and the college much trouble.

Having passed examinations satisfactorily, call on the president, who will assign you to your classes, and inform you in writing what fees you must pay and what books you need. Next call on the college clerk, pay your fees, get your receipt, and draw your books.

HOW TO WITHDRAW FROM THE COLLEGE.

If you have occasion to leave the college, call on the president and make your arrangements with him. He will see that

your accounts, of every kind, are properly adjusted, proper records made of your work, whatever money may be due from your credit deposit refunded, and so arrange your records that your manner of withdrawal shall not stand in the way of an honorable discharge.

Students who leave without having satisfactorily adjusted all these matters will not be entitled to an honorable dismissal.

GENERAL COLLEGE EQUIPMENT.

The tract of land on which the college buildings stand contains 250 acres. Of this one hundred acres is the finest bottom land under irrigation, and the remainder is mesa land. The whole will be used for experimental purposes in connection with the experiment station.

The buildings consist of (1) an elegant two-story and basement brick structure with stone trimmings and massive stone foundation. It contains thirteen beautiful and commodious rooms and an elegant hall capable of seating a large audience. The building is heated throughout by means of hot air furnaces. The rooms are furnished well: blackboards from the slate quarries of Pennsylvania; students' desks of solid antique oak; library furniture from details kindly furnished by W. B. Wickersham, Secretary of Chicago Public Library; chemical, entomological, and mechanical laboratories fitted up with the most approved appliances; and water throughout the building. (2) Out-buildings, feed rooms and horse sheds, sufficient to comfortably house forty horses. These are used to accommodate the horses of those students who ride to the college. (3) A large and commodious ware house for machinery, etc. (4) A pump-house, with machinery for pumping water from a system of six wells for the irrigation of the college campus, which, being higher than the college farm, can not be irrigated from the present system of acequias.

The college has a beautiful library and reading room containing a fine selection of books, and several sets of cyclopaedias and

different dictionaries; a large number of leading magazines, scientific, literary, agricultural, and horticultural periodicals and papers, and many of the Territorial papers, kindly furnished to the institution.

There has also been provided extensive chemical and physical apparatus; numerous microscopes of various kinds; imported models, a skeleton, and charts and maps for the study of human and comparative physiology; a surveyor's outfit of transit, level; a five-inch portable telescope with all accessories, a twenty-four inch slated globe, and other appliances for the student's use.

MECHANICAL ENGINEERING EQUIPMENT.

Although scarcely a year old this department is provided with five (5) iron wood-turning lathes all of different design, thus exhibiting the various types of the best modern machines of this class; also one (1) Universal cross-cut sawing machine, and one (1) forty by six-inch power-driven grind-stone. The above are driven by an eight (8) horse-power high-speed vertical engine, supplied with steam from a twelve (12) horse-power water tube, boiler using petroleum fuel.

Each student is required to run this engine and boiler as a part of his shop practice.

Six (6) cabinet-makers' benches, twelve sets of carpenters' tools, and a well furnished tool room complete this part of the apparatus, all of which is temporarily located in confined quarters in the basement of the main college building.

It is proposed to increase this equipment by the addition of a forge shop and iron-foundry for next year, and later by a machine shop and mechanical laboratory.

In the draughting room accommodations are furnished for six students at one time, and a good start has been made in the collection of drawings of different classes of machinery. A very superior blue printing frame, together with the necessary drawing boards, etc., complete the list of the apparatus so far provided for this work.

CHEMICAL EQUIPMENT.

One of the basement rooms of the college building is a present in use as a chemical laboratory.

This room is connected by pipes with the general water supply tank of the college, and contains a porcelain lined sink for waste water and chemicals, a "hood" or enclosed closet with good outside draught to carry off obnoxious gases, and some cases for storing chemical apparatus and chemicals.

At present it contains temporary desks and fixtures for the accommodation of eight students.

Each desk is supplied with a set of thirty-three reagent bottles, porcelain dishes, beakers, test-tubes, test-tube racks, lamp, platinum foil and wire, and various other things necessary in inorganic analysis.

A small still furnishes the distilled water necessary.

Beside the above, the laboratory contains a No. 2 Becker balance, a good spectroscope, a Joly spiral balance, a Westphal specific gravity balance, a Scheibler saccharimeter, and other pieces of more expensive apparatus necessary in the work.

ENTOMOLOGICAL AND ZOOLOGICAL EQUIPMENT.

The department of physiology, zoology and entomology is furnished with a very full and admirably selected library of standard works on these subjects. Among these may be mentioned full sets of the Proceedings and Memoirs of the Boston Society of Natural History, Transactions of the American Entomological Society, Edward's Butterflies of North America, Standard Natural History, Macquart's Dipteres Exotiques, Rolleston's Forms of Animal Life, Claus and Sedgwick's Zoology, Landois and Stirling's Human Physiology, Gray's Anatomy, Mivart's Cat, Wilder and Gage's Anatomical Technology, and the works of Darwin, Huxley, Packard, and many others.

The department possesses a fine Queen's No. 3 New Model Acme microscope, fitted with glass stage, iris diaphragm, triple

nose-piece, objectives, and all accessories; together with a complete list of instruments and material necessary for preparing, staining, and mounting objects or tissues. Drawing instruments and materials have also been provided for doing the very best class of original work.

The college collection of insects fills about twenty cabinet boxes, and is rapidly increasing. This does not include one hundred and fifty vials of alcoholic specimens, mostly larval stages. The whole is properly classified and arranged. All of this material was collected during the past year, and its value is greatly enhanced by the very full and careful notes that have been kept upon it.

Full appliances for collecting and mounting insects are on hand. Fifty cabinet boxes and a large number of vials and glass jars of all sizes have been procured, as well as cork, pins, setting boards and needles, labels, cyanide boxes, naphthaline cones, apparatus for blowing caterpillars, and all other necessaries.

The physiological and zoological apparatus includes dissecting pans for zoological work, cannulas and syringes for injecting arteries and veins, full sets of dissecting instruments; and models, charts and a mounted human skeleton for the study of physiology.

ENGLISH LANGUAGE.

The faculty recognizes the fact that one of the most important purposes of these colleges is to train the student practically in the use of the English language.

Accordingly, attention is given to orthography, pronunciation the use of dictionaries, analysis of words, the analysis and synthesis of the English sentence, the writing of paragraphs, and the composing of essays.

The elements of rhetoric are taught and practically applied. Much attention is given to punctuation, the use of capitals, clearness of statement in writing, and neatness of arrangement.

In addition to one term's work in the study of English literature, and one in American literature, students are trained and assisted in the use of the great number of excellent periodicals, and literary volumes to be found in the library.

THE SPANISH LANGUAGE.

The relations existing between the United States and the Spanish-American states and provinces are already very important. We believe that these relations are to become, at no distant date, much more important. To Americans, commercially speaking, no other modern language possesses a value equal to the Spanish. Therefore, besides the equitable portion of time assigned to this branch in the regular courses of study, students who promise well in this branch will be permitted to elect to pursue the Spanish to a higher degree of proficiency, and omit such other branches of the regular course as they and the faculty may agree upon.

MILITARY TACTICS.

The Board of Regents is in correspondence with the Secretary of War in reference to the detail of an officer to take charge of this department, and we hope to be able soon to announce that satisfactory arrangements have been completed.

BOARD.

As yet, the college can do nothing at furnishing board. Students and teachers have heretofore found board in private familes at reasonable rates, and it is hoped and believed that they will continue to find ample accommodations of this kind. It is the universal testimony of educators that homes in private familes are the very best for students. Some take rooms and board themselves at reduced cost. This often works very satisfactorily.

COST OF BOARD.

During the past year the price of board with room has been from $16 to $20 per month. Occasionally where one person

required a room alone, it has been $25.00 per month. Where students propose to furnish their own rooms they should provide for this before leaving home. The freight on such articles as may be needed and can generally be spared from home is very light. To either buy or rent is not economical.

Within reach of the college building, are houses for rent at reasonable prices. Many families have resided in these during the school year on purpose to give their children an opportunity to attend college. Where practicable, this plan is recommended; perhaps no other way is so satisfactory.

LABOR FOR STUDENTS.

Although we do not recommend any student to depend entirely on earning sufficient to pay his expenses through college, it is true that some young men have more than made the college expenses during the past year. These have always stood and highest in scholarship and deportment. About the building on the farm, there is always work to be done, and the policy is to give it to students in preference to any one else. There can be no question that those students who are willing to work during their hours for recreation, will become the men and women who move the world.

POLITICS AND RELIGION.

That pupils may become loyal and devoted members of our great nation, it shall be one purpose of the college to instil into their minds correct ideas of true patriotism and the duties of good citizens. Patriotism is one thing, partisanship is another, and may be a very different thing. While the former will be cultivated by all proper means, the latter will not be allowed in connection with the work of the college.

No culture is valuable that is not founded upon and accompanied by good moral character. By almost universal assent, moral character is believed to have its foundation in the cardinal principles of the Christian religion. These will ever receive

the high respect to which they are entitled, but sectarianism in any form will not be tolerated. All forms of religious belief will be respected, and Catholic and Protestant, Jew and Gentile, will here find a hospitable welcome, and a home in which they will be treated as honored guests.

LITERARY SOCIETIES.

There are in the college two literary societies—the Alpha Chi, and the Cordeagian—managed by the young men and young women students respectively,—both of which, though but recently organized, have made rapid growth, and have bright prospects for the future.

The Alpha Chi society was organized October 25th, 1891, as a secret society, with some six members. On January 10th, 1892, all secrecy was abolished and the society re-organized, since which time it has made rapid and steady growth, and now has a membership of eighteen, most of whom are students in the college. The objects of the society, as stated in the constitution, are: "The free discussion of any subject coming before the meeting, for the purpose of diffusing knowledge among its members, and such other literary work as the committee on programme may prescribe." Officers are elected by ballot on the first of each quarter. The requirements for admisssion to this society are that members shall be at least sixteen years of age, and students of good standing in this institution; also the payment of one dollar as entrance fee. The regular meetings are held on Friday afternoon of each week, to which a general invitation is extended to all interested. At the close of each school year a public entertainment is given, at which the best talent the society can show is exhibited.

The Cordeagian society was organized by the young ladies of the college on September 18th, 1891. Although the first organization of the kind in the college, it readily made for itself a permanent place in the institution. The society colors are

pink and blue. The programmes, given weekly, consist of debates, essays, discussions, select readings, recitations, impromptu speaking, etc.

Preparatory School.

INSTRUCTORS.

John P. Owen, Principal.
A. E. Davisson,[1] First Assistant.
Ida M. Jones, Second Assistant.
Elmer O. Wooton, B. S., Language.
Clarence T. Hagerty, B. S., Arithmetic.
Phœbe E. Haines, M. S., Drawing.
Cosette Rynerson, Instrumental Music.
J. A. Lowe,[2] Spanish.
F. F. Barker, LL. B.,[3] Arithmetic.

The facilities for obtaining an elementary education in New Mexico having heretofore been somewhat limited, it has been found necessary to connect with the college a preparatory school. It is the intention to regularly raise the standard of this school by gradually dropping the lower grades, until none shall be retained except the "A" and "B" classes.

During the coming year there will be three grades: A, B, and C. The following is the course of study for the three years:

(1) Elected April 7, 1892.
(2) Resigned in February, 1892.
(3) Elected March 1, 1892.

"C" CLASS.

AUTUMN.	WINTER.	SPRING.
Arithmetic, pg. 8 to 130.	Arith., pg. 130 to 180.	Arith., pg. 180 and review.
Lang., Reid's In't. Les. 40.	Lang., Les. 40 to 81.	Lang., Les. 81 to end of book.
Fourth Reader.	Fourth Reader.	Fourth Reader.
Spelling from Reader.	Spelling.	Spelling.
Writing.	Writing.	Writing.
El. Geography.	El. Geography.	El. Geography.

"B" CLASS.

Arihtmetic, pg. 60 to 136.	Arithmetic, pg. 136 to 188.	Arithmetic, pg. 188 to 234.
Grammar, Les. 1 to 40.	Grammar, Les. 40 to 65.	Grammar, Les. 65 to 89.
Elementary History.	Geography, p g. 1 to 97.	Geography, complete.
Fourth Reader, finish.	Fifth Reader.	Fifth Reader.
Spelling, Les. 1 to 40.	Spelling, Les. 40 to Part II.	Spelling, Bk. 2.
Drawing, Bk. 5.	Drawing, Bk. 8.	Drawing, Bk. 8.
Writing.	Writing.	Writing.
Declamation, (1).	Declamation, (1).	Declamation, (1).

"A" CLASS.

Arithmetic, pg. 234 to 270.	Arithmetic, 270 to 334.	Arithmetic, complete.
History, pg. 1 to 197.	History complete.	Hygiene.
Grammar, Les. 89 to end of 1st Book.	Grammar, Les. 25 to 65.	Grammar, Les. 65 to 110.
Spelling, Part III	Spelliug, Part IV.	Spelling, (words of all subjects studied.)
Drawing, Bk. 9.	Fifth Reader.	Reading, 4; Composition, 1.
Fifth Reader.	Drawing, Bk. 10.	Drawing, Bk. 10.
Writing.	Writing.	Writing.
Declamation, (1).	Declamation, (1).	Declamation, (1).

Pupils who can not enter any of these classes will not be received. It has been thought best not to receive any pupils under the age of fourteen, unless said pupils reside in this immediate vicinity. The pupils of this school have the same library and lecture privileges that those of the college have. They will also be governed by the same rules, and required to drill.

The principal of this school is a professor in the college, and an experienced educator. The first assistant is a graduate of the Indiana state normal school, and has had eight years of successful experience as superintendent of graded schools. Frequent instruction by the different members of the college faculty is also given. Graduates from this school are granted certificates, which admit them to the college.

Students and patrons often importune teachers to admit applicants to advanced standing, even though it is evident that

the pupils under consideration are deficient in preparation. Teachers, being desirous of pleasing when they can, often yield to these importunities and grant the supposed favor. Long experience convinces us that all parties concerned make a great mistake. Pupils enjoy what they can comprehend, and dislike what is beyond their ability. Education is a growth. It can be forced abnormally with no better results than the young oak can. Good preparation insures good progress, happy times, and satisfactory results. Deficient preparation breeds discouragement, stimulates irritability, makes the pupil dissatisfied with himself, his teachers, and the school, and in the majority of cases causes him to leave school and pass his life ignorant and without culture. Therefore, please be anxious and willing to patiently prepare before seeking admission to the Freshman class.

To guide students somewhat in their preparation, the following suggestions are offered. In arithmetic, pay particular attention to greatest common divisor, least common multiple; the fundamental processes in common and decimal fractions, especially division of decimals; true and bank discount; proportion, square and cube roots, and the metric system.

In grammar, learn the difference between simple, complex, and compound sentences; analyze each kind, and know well the difference between the object and the attribute complements; be able to use capitals and punctuation marks in simple exercises, and be more anxious to use language correctly than to recite definitions and rules.

In United States history, get clear notions of the discoveries, explorations, early struggles of the colonists, revolutionary war—its causes and results, principal events of the several administrations; causes, events, and results of the civil war, and important events that have transpired since. Learn thoroughly important facts rather than a minute detail of minor matters.

By all means strive to be a good speller. An experienced educator was accustomed to say: "It is no honor to be a *good* speller, but it is a great disgrace to be a *poor* one." Poor spelling has blighted many a good prospect.

STUDENTS—"A" CLASS.

John Lee Armstrong,	Engle.
Laura Beckwith,	Las Cruces.
Herbert E. Bryan,	Lower Peñasco.
John Bowman Bryan,	Las Cruces.
Millicent Lucy Barker,	Las Cruces.
Numa Grandjean Buchoz,	Las Cruces.
Pearl Homer Bailey,	Anthony.
Gertrude Casad,	La Mesilla.
Maggie May DeMier,	Las Cruces.
James DeMier,	Las Cruces.
Edith Marion Dawson,	Las Cruces.
Samuel Rogers French,	Mesilla Park.
Maggie French,	Mesilla Park.
Mae Gilmore,	Ft. Stanton.
Ora Gilmore,	Ft. Stanton.
Watt Gilmore,	Ft. Stanton.
Jose Gonzales,	San Marcial.
Mary Katharine Herron,	La Mesilla.
Phillip Wilder Mothersill,	Engle.
Herbert McGrath,	Lordsburg.
James Matthew McNatt,	Upper Peñasco.
Grace McCrea,	Las Cruces.
Nellie Jane Martin,	La Mesilla.
Florence May Owen,	Mesilla Park.
Clarence Edgar Rhodes,	Mescalero.
Eleanor Maude Steel,	Las Cruces.
Lillie M. Smith,	Las Cruces.
Helen Ruth Worden,	Hillsboro.

"B" CLASS—FIRST DIVISION.

Catarino Armijo,	Las Cruces.
David Cecilio Ames,	Las Cruces.
William Brazel,	Ft. Stanton.
Frank Bogardus,	Las Cruces.
Albina Coleman,	Rincon.
John Cook,	Fairview.
Edward James Coe,	Lincoln.
Edwin Eugene Casey,	Las Cruces.
George Lee Grover,	Lake Valley.
Bonnie Vine Ruth Gans,	Las Cruces.
D. Gans,	Las Cruces.
James Judson Hyatt,	Pine Springs.
Luke Mark Kennedy,	Pine Springs.
Henry Kezer,	Las Cruces.
Spiva Lane Neatherlin,	Lower Peñasco.
Henry Lemon Rynerson,	Las Cruces.

SECOND DIVISION.

Tudie Bailey,	La Mesilla.
Edward Spencer Buchoz,	Las Cruces.
Lola Jennett Bennett,	Las Cruces.
Nannie Celia Baird,	Upper Penasco.
Nettie Bullard,	Pine Springs.
Isaias Chavez,	San Marcial.
C. W. V. Daniel,	Mora.
Mary Ella Gentz,	Hillsboro.
Ula Gilmore,	Ft. Stanton.
Esther Katharine Martin,	La Mesilla.
George Washington Page,	Las Cruces.
Theodore Philips,	Lake Valley.
Lumina Perrault,	Hillsboro.
Elizabeth May Savage,	Las Cruces.
Nathan Smith,	Las Cruces.

Enrique Samaniego.	Las Cruces.
Jose Tellez,	Las Cruces.

"C" CLASS.

Isidoro Armijo, Jr.,	Las Cruces.
Maude Ann Bailey.	Ft. Stanton.
Tommie A. Bull.	Mesilla.
Eugene Baird.	Upper Peñasco.
Leslie Bryan.	Lower Peñasco.
Mark Hampton Bryan.	Lower Peñasco.
George Bullard.	Pine Springs.
Minnie Bullard.	Pine Springs.
Darwin Casad.	La Mesilla.
Eugene DeMier.	Las Cruces.
Pinkie Ford.	Las Cruces.
John Fountain.	Las Cruces.
Robert Sydney Grumbles.	White Oaks.
John Wages Hyatt.	Pine Springs.
Fred Hunter.	Durango, Col.
Jennie Johnson.	Durango, Col.
Morgan Llewellyn.	Las Cruces.
Lawrence Lapoint.	Las Cruces.
Paul McCourt.	White Oaks.
Dolores Marrufio.	Las Cruces.
Joseph Lindley Maxwell.	Tularosa.
Maude Louise McFie.	Las Cruces.
Viola V. J. Orr.	Upper Peñasco.
James Edward Owen.	Mesilla Park.
George Arthur Perrault.	Hillsboro.
Trinidad Romero.	Socorro.
Frank Schoonmaker.	El Paso, Tex.
Nona Schoonmaker.	El Paso, Tex.
Max Torres.	Socorro.

Carl Joe Sherman,	Deming.
Olga Grove,	Pine Springs.
Herbert Mason Grove,	Pine Springs.
Matt Gilmore,	Ft. Stanton.

"D" CLASS.

Daniel Ackenback,	Las Cruces.
Alfred Oliver Perrault,	Hillsboro.
Edward Albert Perrault,	Hillsboro.
Albert V. Reed,	Las Cruces.
Francisco Sarabia,	Las Cruces.
Matthew Steel,	Las Cruces.
Lawson Lowe,	Las Cruces.
Antonio Velarde,	Meoqui, Chihuahua.
Jesus Velarde,	Meoqui, Chihuahua.

SPECIALS.

Edwin Quinn,	Gallup.
John Kennedy,	Las Cruces

SUMMARY OF STUDENTS.

COLLEGE DEPARTMENT.

Juniors	1	
Sophomores	13	
Freshmen	15	29

PREPARATORY SCHOOL.

Class A	28	
Class B—First Division	15	
Class B—Second Division	18	
Class C	33	
Class D	9	
Specials	2	105
		134

The Agricultural Experiment Station.

STATION STAFF. [1]

Board of Control: The Board of Regents.

Hiram Hadley, A.M., Director.

Ainsworth E. Blount, A.M., Horticulturist and Agriculturist.

Elmer O. Wooton, B.S., Botanist.

C. H. Tyler Townsend, Entomologist and Zoologist.

Arthur Goss, B.S., A.C., Chemist.

Harvey H. Griffin, B.S., First Assistant to Agriculturist and Horticulturist.

J. B. Sloan, Meteorologist. [2]

Watt Gilmore, Assistant in Meteorology.

By the congressional act of 1887, a "department" of agricultural colleges was endowed, having for its purpose the performing of experiments of value to agriculture and horticulture, and the diffusing of valuable information among the people.

This department of the college is in successful operation. The farm consists of ninety acres of excellent land under irrigation, and a much larger amount of mesa land. At great outlay of labor, the former has been graded to an almost perfect surface.

A great number of valuable horticultural and agricultural experiments are in process of testing, and more are being constantly begun. During a large portion of the year, students have opportunites to labor on this farm, thus enabling them to defray a considerable portion of their expenses. Besides this, they are under the direct guidance and instruction of educated

(1) Arranged in order of election.

(2) Resigned March 1, 1892.

horticulturists and agriculturists of large experience. This alone is a valuable consideration.

Of the mesa land, thirty acres have been cleared of mesquite and put into good condition for experimentation. A portion of this is being used without irrigation, and a portion of the remainder is supplied with water raised from wells by means of steam power. Thus grape vines, and fruit, shade, and ornamental trees are now growing upon the college campus. We shall soon be able to report upon the feasibility and value of this project.

A large amount of entomological work has been done which promises results of the greatest practical value to the horticulturist and agriculturist. It has been demonstrated that New Mexico is comparatively unworked in this direction, and emphasizes the great value of such work to the Territory at large, in order that our injurious insects may be recognized and our farmers and fruit-growers warned against them.

Five bulletins have been issued on topics of interest to farmers, and more are in preparation. Students of the college have the means of becoming educated in these most fascinating and promising occupations.

Errata.

Page 3, line 14 from top, *for* M. E. *read* M.M. E.

Page 8, line 1 from top, *for* Chemical Agriculture *read* Agricultural Chemistry.

Page 26, line 1 from top, *read* trigonometrical surveying and leveling the second term, and by leveling and topographical surveying the third term.

Page 26, line 5 from top, *for* tremonts *read* turnouts.

Page 39, line 3 from top, *for* 8 *read* 88.